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Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.14/BJK/WMM/Gradation/2015-16

10.06.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Mr. B.J. Kumar,** Contractor, Bangalore.

Name of Work : Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015

Date of Testing : 10.06.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	1.9	98.1	95-100
22.4	2500	2650	33.1	66.9	60-80
11.2	1905	4555	56.9	43.1	40-60
4.75	980	5535	69.2	30.8	25-40
2.36	715	6250	78.1	21.9	15-30
0.600	795	7045	88.1	11.9	8-22
0.075	695	7740	96.8	3.3	0-8

Note:

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Basaveshwaranagar,
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ಟಿ.ದಾಸರಹಳ್ಳಿ ಉಪ-ವಿಭಾಗ
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10.06.2015

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. B.J. Kumar,** Contractor, Bangalore.
Name of the Work	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	10.06.2015

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	21.88	22.08	
	100* (W_2/W_1)%			21.98

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.14/BJK/WMM/S-T/2015-16 10.06.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. B.J. Kumar,** Contractor, Bangalore.
Name of Work	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	10.06.2015

Result : Flakiness Index = **11.98%**

Elongation Index = **13.05%**

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Result : Combined Flakiness & Elongation index 25.03%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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JobNo: CTCE/BBMP/W.No.14/BJK/BC/Bitumen/2015-16 18.06.2015

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.J. Kumar,** Contractor, Bangalore.
NAME OF THE WORK	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
SAMPLE I/D	Pot holes filling to roads in Bagalagunte Ward No.14, BBMP, Bangalore.
DATE OF TESTING	18.06.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	**5.30**	

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JobNo: CTCE/BBMP/W.No.14/BJK/BC/Bitumen/2015-16 18.06.2015

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.J. Kumar,** Contractor, Bangalore.
NAME OF THE WORK	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
SAMPLE I/D	Pot holes filling to roads in Bagalagunte Ward No.14, BBMP, Bangalore.
DATE OF TESTING	18.06.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.3	9.77	9.77	90.23	79-100
9.5	35.62	7.51	17.28	82.72	70-88
4.75	69.52	14.67	31.95	68.05	53-71
2.36	64.23	13.55	45.50	54.50	42-58
1.18	48.52	10.24	55.74	44.26	34-48
0.6	62.32	13.15	68.88	31.12	26-38
0.3	48.58	10.25	79.13	20.87	18-28
0.15	30.25	6.38	85.51	14.49	12-20
0.075	32.62	6.88	92.40	7.60	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	32.25	6.82	6.82	93.18	79-100
9.5	40.25	8.51	15.33	84.67	70-88
4.75	76.36	16.14	31.47	68.53	53-71
2.36	62.32	13.18	44.65	55.35	42-58
1.18	73.25	15.49	60.13	39.87	34-48
0.6	43.25	9.14	69.28	30.72	26-38
0.3	36.25	7.66	76.94	23.06	18-28
0.15	42.25	8.93	85.87	14.13	12-20
0.075	38.65	8.17	94.04	5.96	4-10

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Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.J. Kumar,** Contractor, Bangalore.
NAME OF THE WORK	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
SAMPLE I/D	Pot holes filling to roads in Bagalagunte Ward No.14, BBMP, Bangalore.
DATE OF TESTING	19.06.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473.5	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26.5	27.00
7. Bitumen content in %	5.30	5.40
8. Average	**5.35**	

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JobNo: CTCE/BBMP/W.No.14/BJK/BC/Bitumen/2015-16 19.06.2015

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. B.J. Kumar,** Contractor, Bangalore.
NAME OF THE WORK	Providing & Asphalting to pot holes filling & road cuttings in Dasarahalli Ward No.14, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2015-16 Dated: 08.06.2015
SAMPLE I/D	Pot holes filling to roads in Bagalagunte Ward No.14, BBMP, Bangalore.
DATE OF TESTING	19.06.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	38.65	8.16	8.16	91.84	79-100
9.5	39.62	8.37	16.53	83.47	70-88
4.75	73.25	15.47	32.00	68.00	53-71
2.36	62.32	13.16	45.16	54.84	42-58
1.18	50.25	10.61	55.77	44.23	34-48
0.6	65.32	13.80	69.57	30.43	26-38
0.3	50.26	10.61	80.18	19.82	18-28
0.15	32.25	6.81	86.99	13.01	12-20
0.075	35.62	7.52	94.52	5.48	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	32.63	6.90	6.90	93.10	79-100
9.5	69.32	14.66	21.55	78.45	70-88
4.75	73.25	15.49	37.04	62.96	53-71
2.36	59.62	12.60	49.64	50.36	42-58
1.18	71.22	15.06	64.70	35.30	34-48
0.6	38.65	8.17	72.87	27.13	26-38
0.3	32.62	6.90	79.77	20.23	18-28
0.15	30.25	6.40	86.16	13.84	12-20
0.075	30.25	6.40	92.56	7.44	4-10

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